

LCS Program Overview

Mr. Jim Heller

LCS Integrated Schedule

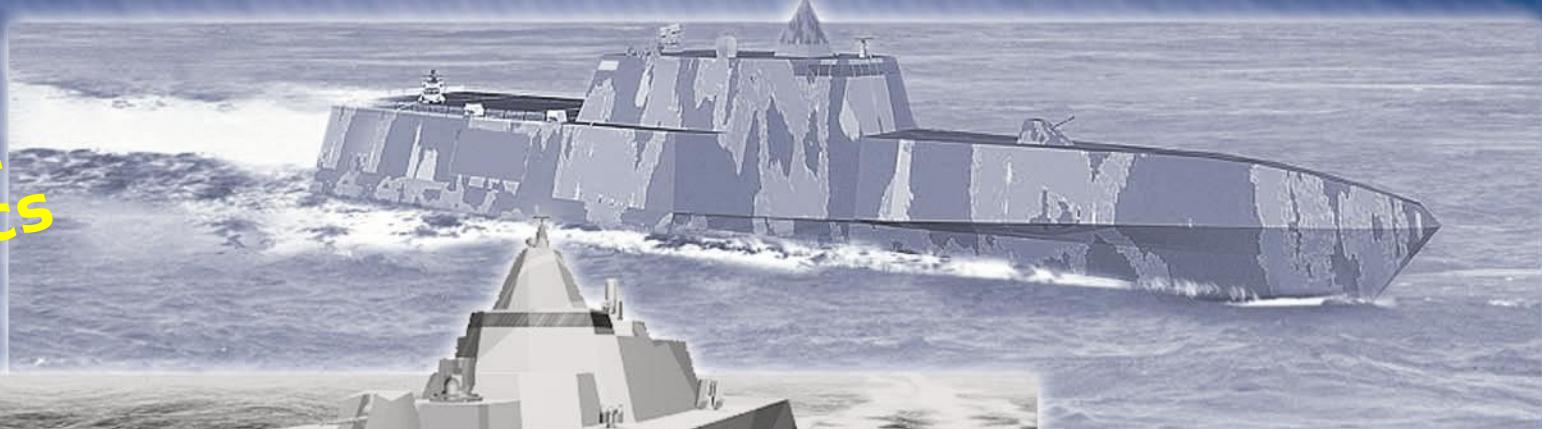
(FY05 Flight 0, FY08 Flight I)

	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Acquisition Milestones and Requirements								
	Concept Exploration	Program Review	Concept & Tech Development	Sys Dev & Demo	Production and Deployment			
	DAE Review	MS-A, Program	IPR	IPR	IPR	IPR	MSB	
	Draft PD-IRD	Start ICD Development	Start ICD	CDD Development			CDD	
Flight 0 (RDT&E & SCN)	Ship	RFP Select Prelim Design (3)	Select Final Design (s)	Start 1st Ship DD & Const	Start Ship 2 DD & Const	1st Ship Delivery	2nd Ship Delivery	
Flight 1 (SCN)	Ship			RFP Award Concept Design (6)	RFP Award Prelim. Design (3)	Award Final Design	Start Flight	Deliver Ship 3
LCS Design / Build	Mission Packages		Zone Interface System Eng.	Flight 0	Flight 1	FL 0 Modules	FL 1 Modules	
T&E		Early Participation T&E Strategy Development	DTI		DT Assist / Combined DT / OT			DTII
	T&E Strategy	TEMP		TEMP Update		TEMP Update	EOA or OPEVAL	
Documentation / Information Requirements (Notional)	MS A Products	Program Initiation Products		Live Fire Waiver & LFT&E Management Plan ICD	PPP Exit Criteria STAR TEMP	MSLT Products	Report CDD LRIP Quantities	
	Analysis of Multiple Concepts Acquisition Strategy Draft T&E Evaluation	C4IS SAR Acquisition Strategy APB				Exit Criteria ICE & CARD Manpower Estimate		
Procurement	IRD Exit Criteria		AOA/Concept R&D Exploration and Development	1 SCN	0	3 SCN	4 SCN	

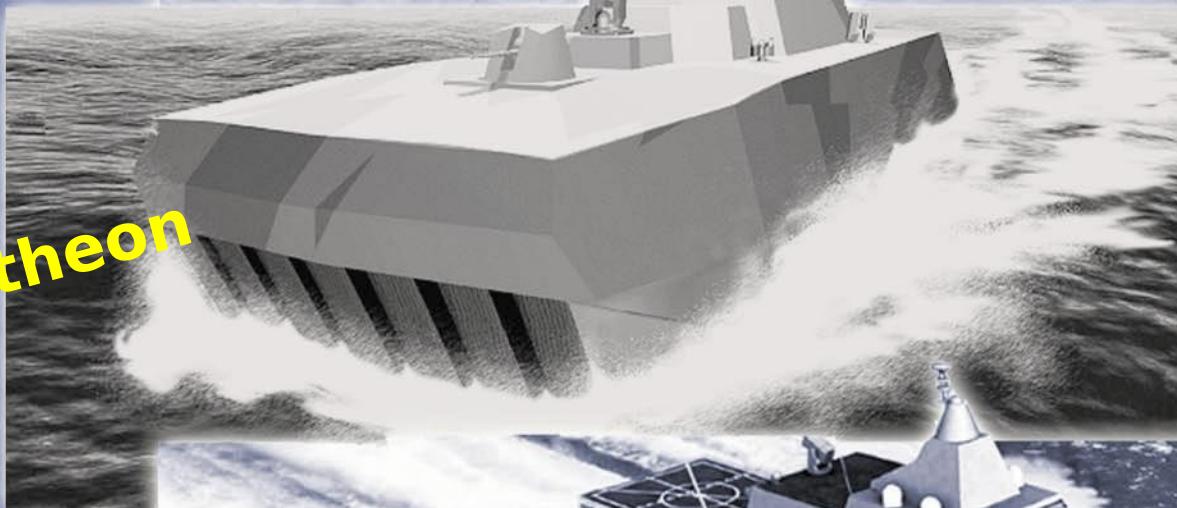
Prelim Design Historical Schedule

<input checked="" type="checkbox"/> ASN decision meeting	07 Feb 03
<input checked="" type="checkbox"/> Issue Synopsis	10 Feb 03
<input checked="" type="checkbox"/> Acquisition plan (approved by PEO) Feb 03	13
<input checked="" type="checkbox"/> Draft RFP to Industry	14 Feb 03
<input checked="" type="checkbox"/> Industry Day	20 Feb 03
<input checked="" type="checkbox"/> Issue formal solicitation	28 Feb 03
<input checked="" type="checkbox"/> Final SSP	28 Feb 03
<input checked="" type="checkbox"/> Receipt of proposals	14 Apr 03
<input checked="" type="checkbox"/> Proposal evaluation	15 Apr - 13 Jul 03
<input checked="" type="checkbox"/> Contract(s) Award	17 Jul 03

General
Dynamics



Raytheon



Lockheed
Martin



LCS
Flight 0
Concepts



Bath Iron Works

A GENERAL DYNAMICS COMPANY

General Dynamics Principal Subcontractors

Bath Iron Works

A GENERAL DYNAMICS COMPANY

- Prime Contractor
- Program Management & Planning
- Technical Management
- LCS System Production Lead



- Seaframe (Trimaran) Design and Production Team

GENERAL DYNAMICS

Advanced Information Systems

- Core Mission Systems Design Team



- Ship Control and Automation Software Lead

BAE SYSTEMS

QINETIQ -- Triton

- Packaged Mission Systems Team



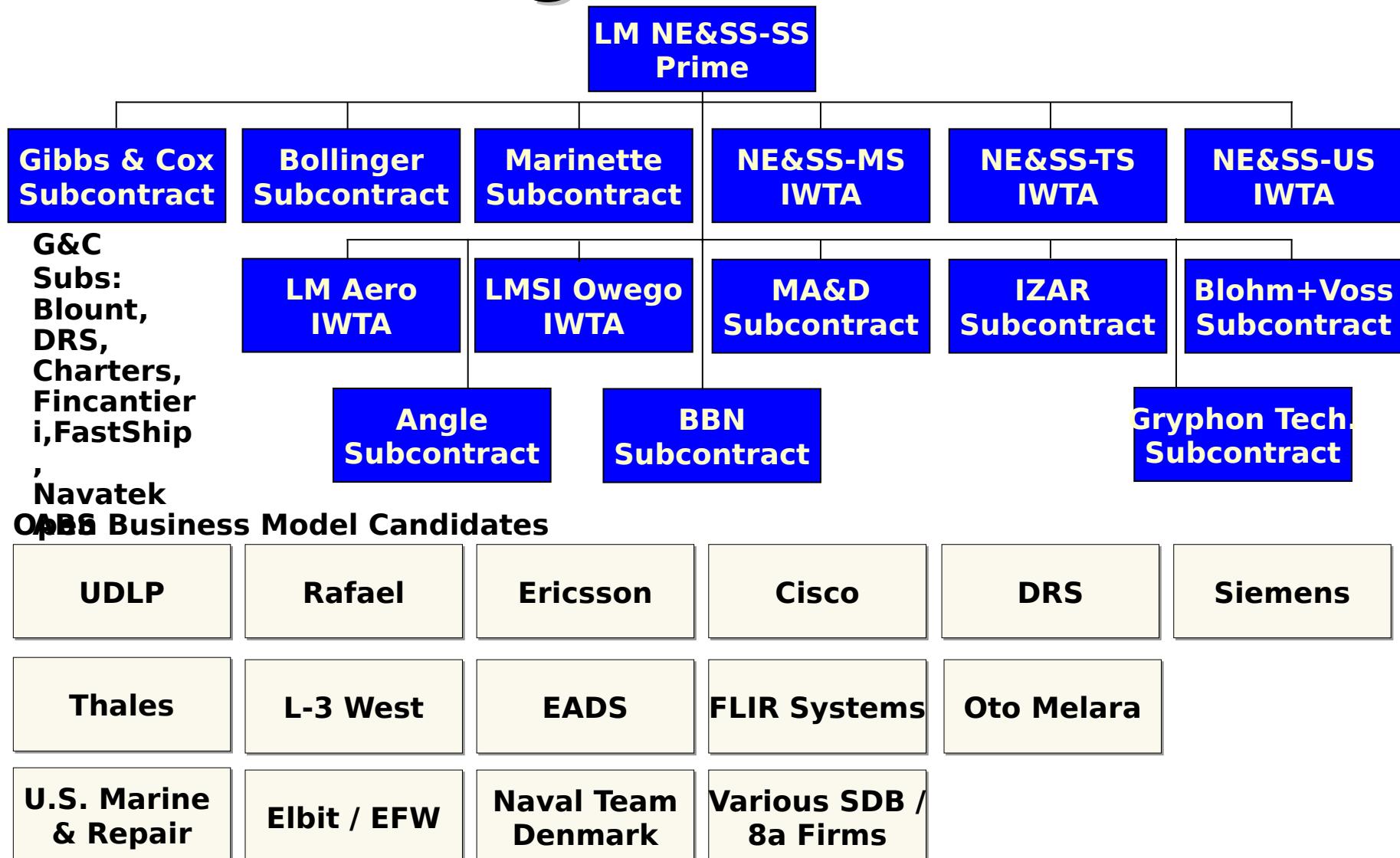
- Ship Motion & Dynamic Stability Analysis



**LOCKHEED MARTIN
GIBBS & COX
MARINETTE MARINE
BOLLINGER SHIPYARDS**



Lockheed Martin Organization



Raytheon Team LCS



Customer Success is Our Mission

Raytheon Team

Raytheon

- LCS Prime Contractor
- Leading aerospace defense contractor
- Total systems integrator
- Core Mission Systems Architect



- Largest full service naval engineering and Combatant Ship design firm
- Ship design process experience
- Tech transfer, design, production methods
- Seaframe Product Model IPT Lead
- Certification experience, ABS, Deepwater
- DD21/DD(X) ship designer



- Reliable and proven mid-tier shipyard
- Over 250 vessels constructed
- Experienced construction and outfitting



- Composite structure fabrication
- Advanced composite manufacturing processes
- Modular superstructure



- Designer/builder of baseline Skjold SES class
- Advanced composite manufacturing processes
- Technology transfer

Integrated Systems Engineering and Naval Engineering

Contract Structure

Statement of Work Overview - Preliminary Design

Littoral Combat Ship (LCS) Preliminary Design (7 months)

- ◆ Program planning, scheduling, resourcing, contracting, and monitoring to complete the LCS Preliminary Design
- ◆ System Engineering (including carpet plots)
- ◆ CAIV
- ◆ Specified Performance Document and Performance Spec
- ◆ Mission modularity and tech insertion and refresh
- ◆ Human System Engineering, manning analysis
- ◆ LCES planning (including PBL considerations)
- ◆ Risk Management Plan
- ◆ Certification and qualification processes
- ◆ Integrated Data Environment

Notional Near-term Schedule for Phase II

- Preliminary Design Contract(s) 3 Awarded 17 Jul 03**
 - ◆ Preliminary Design 17 Jul 03 - 14 Feb 04**
- Update / RFP modification for option items 19 Dec 03**
- Navy Approved Capabilities Development Document 06 Jan 04**
 - ◆ Industry submit proposals for next phase 30 Jan 04**
 - ◆ Downselect to one or two for Final Design Jun 04**
 - ◆ Exercise 1st construction option Jan 05**
 - ◆ Exercise 2nd construction option Dec 05**

FSD Structure

Statement of Work Overview - Final Systems Design (CLINs 0004, 0005, 0006)

Completion of LCS Final Design (CLIN 0004: 7 months, CLIN 0005: 16 months)

- ♦ Perform the technical, procurement and other tasks necessary for the Final System Design, Detail Design and Construction of the LCS Flight 0 ship(s)
- ♦ Provide the management effort necessary to ensure the on-schedule and within cost completion of Final System Design, Detail Design and Construction
- ♦ Identify and maintain visibility of all problems and potential problems arising during contract performance, which could impact the on-schedule and within cost completion of the LCS Flight 0 ship(s)
- ♦ Perform Final System Design of LCS Flight 0 Ships, in accordance with the Performance Specification submitted at the end of Preliminary Design
- ♦ Complete LCS Flight 0 Flight System Design, test and perform other risk reduction activities that establish that the design meets requirements and is ready for detail design, equipment production, integration, ship construction and life cycle engineering and logistics support planning
- ♦ Prepare and deliver the Build Specification, technical specification(s) and graphics package(s) consistent with the Performance Specification
- ♦ Conduct Design Reviews
 - Preliminary Design Review (PDR)
 - Initial Critical Design Review (ICDR1)
 - Final Critical Design Review (FCDR)

Option Items Supplies / Services

0004 Final System Design for LCS 1
0005 Final System Design for LCS 2
0006 Special Studies for 0004 & 0005

SS1
SS2
X 0005

DD&C Structure

Statement of Work Overview - Detail Design and Construction

(CLINs 0007, 0008, 0009, 0010, 0011)

- ♦ **Perform Detail Design and Construction of LCS Flight Ship(s)**
- ♦ **Complete the LCS Flight 0 recurring and non-recurring engineering, detail design, start-up manufacturing required to support ship construction, system integration and ship and core mission system equipment production**
- ♦ **Implement the life cycle engineering and logistics support structure for the LCS Flight 0**
- ♦ **Perform system integration, construct, test and deliver the ship and initial logistics support of the LCS first and / or second ships**
- ♦ **Construct the LCS Flight 0 ship(s) at the Contractor's and / or Subcontractor's U.S. facilities**
- ♦ **Complete, validate and document the "as-built" LCS Configuration Baseline**
- ♦ **Prepare a complete set of construction design calculations necessary for construction**
- ♦ **Conduct Reviews**

Option

Items Supplies / Services

0007	Detail Design and Construction for LCS 1
0008	Detail Design and Construction for LCS 2
0009	Construction of LCS 2
0010	Data for 0004, 0005, 0007, 0008, 0009
0011	Special Studies for 0007, 0008, 0009

Other Structure

Statement of Work Overview - Other Options (CLINs 0012 - 0018)

- ◆ **Life Cycle Engineering and Support**
 - The Government may establish and maintain a long term relationship with the Contractor throughout the service life of the LCS Flight 0 ship(s)
 - Specific requirements will be detailed in a separate order
- ◆ **Provisioned Item Orders (PIO)**
 - Standard item on furnishing supplies or services ordered by the Government
 - Priced Orders, Undefinitized Orders, Unilateral Undefinitized Orders, Others
- ◆ **Long Lead Material (for CLINs 0007, 0008, 0009)**
 - When ordered, the Contractor shall manufacture, produce, inspect, test and maintain Long Lead Time Material
- ◆ **Post Delivery - Test and Evaluation - LCS 1**
 - Conduct a trial post delivery in coordination with ship's force, PMS 501 and Navy inspection / testing teams to test the Seafame with the mission module pack
 - Plan the trial, instrument the ship, conduct the trial, analyze trial data and results, repair damage
- ◆ **Post Delivery - Test and Evaluation - LCI**
 - Same as above

Option	Items Supplies / Services
0012	LCE&S
0013	Provisioned Items Orders (PIO)
0014	Long Lead Material - CLIN 0007
0015	Long Lead Material - CLIN 0008
0016	Long Lead Material - CLIN 0009
0017	Post Delivery, Test and Evaluation, LCI
0018	Post Delivery, Test and Evaluation, LCI

Attachments

- ◆ **Attachment J-1: Financial Accounting Data Sheet**
 - To be provided at award
- ◆ **Attachment J-2: Contract Security Classification Specification, DD-254**
- ◆ **Attachment J-3A: Data Requirements List for Phase II**
- ◆ **Attachment J-4A: Flight 0 Capabilities Development Document (CDD)**
 - **CDD approved at Navy level provided 06 January 2004**
 - **CDD validated at JROC level to be provided prior to award and will supercede the Navy approved CDD at that time**

Attachments (cont)

- ◆ **Attachment J-5A: LCS Reconfigurable Mission Package Interface Control Document**
- ◆ **Attachment J-8A: Littoral Combat Ship CONOPS**
 - A revised J-8 that will apply to Phase II will be provided at award and will be numbered “J-8A”
- ◆ **Attachment J-10A: OACE Technologies and Standards Document (unsigned)**
- ◆ **Attachment J-10B: Open Architecture Functional Architecture Definition Document (unsigned)**
- ◆ **Attachment J-11: Performance Based Logistics Guidance**
 - J-11 remains in effect for Phase II
- ◆ **Attachment J-12: Reserved**
 - J-12 remains in effect but is now incorporated into the appropriate CDRLs

Attachments (cont)

- ◆ **Attachment J-13A: Reserved**
- ◆ **Attachment J-14A: Small, Small Disadvantaged, and Women-Owned Small Business Subcontracting Plan**
 - The negotiated subcontracting plan for Phase II shall be incorporated into the contract at award as J-14A
- ◆ **Attachment J-15: Reserved**
 - J-15 remains in effect but is now incorporated into the appropriate CDRLs
- ◆ **Attachment J-16: Performance Specification**
 - When the Performance Specification is approved at the beginning of Final Design at the second PDR, it will then be incorporated into the contract as Attachment J-16
- ◆ **Attachment J-17: Specification for Building LCS (Build Spec)**
 - At FCDR when the Build Spec is approved, it shall be incorporated into the contract as Attachment J-17

Attachments (cont)

- ◆ **Attachment J-18: Government Purpose Rights and Technical Data and Computer Software**
 - Negotiated data rights and prices will be incorporated into the contract as Attachment J-18 upon award
- ◆ **Attachment J-19: Event based Award Fee Key Events, Key Event Criteria, Period Assessment Criteria and Pools**

LCS Preliminary Design Schedule

	4QFY03	1QFY04	2QFY04	3QFY04	4QFY04
Acquisition Milestone Requirements	JUL OIPT	OCT Concept Refinement	JAN IIP	APR OIPT	JUL Tech. Development
Documentation Updates	PD - IRD J-9		CDD (NAVY) J-9	ICD (JROC)	MS A / Prog. Init. CDD (JROC)
LCS Design / Integration / Build Contractor Deliverable	Award MSS IT IPR MSS IT		4,5,8,9, Preliminary Design IPR / MSSIT	MSS IT PDR Final Design Proposal Due	Final Design Option Exercise
CAR Pcc Analysis CAV					Supports: SAR, CARD, CAIG Assessment, APB, Unit Cost Report, DAES, Manpower Review
Manning Concept C4IS PER & OV1 ESHMP					Supports: C4ISP, CCA
ESOH					Supports: PESHE
Master P2 TEMP Strategy					Supports: T&E Strategy / Draft TEMP
	△ - Draft	△ - Final Deliverable			